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**From:** Dalton, Joel [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=5E590CA117F84CC384ADCF13B68B4358-DALTON, JOEL]  
**Sent:** 2/29/2012 11:50:10 PM  
**To:** Morrie Lee [ml90@chrysler.com]  
**Subject:** Re: FW: Hood Down and Variable speed fan request  
**Attachments:** DIB0001

We can talk tmrw afternoon; morning is tied up with meetings, it turns out.

Thanks for your patience.

Joel Dalton  
US Environmental Protection Agency  
734.214.4579

**From:** Morrie Lee <ml90@chrysler.com>  
**To:** Joel Dalton/AA/USEPA/US@EPA  
**Date:** 02/29/2012 10:31 AM  
**Subject:** FW: Hood Down and Variable speed fan request

Please reply with your concurrence to our request. We are pressed for time and need to move forward.

Morrie Lee  
Manager - Emissions Certification Assurance  
Chrysler Group LLC  
T/L: 836-5168 Outside Line: (734) 475-5168  
Fax: (734) 475-5260  
CIMS: 422-01-11  
e-mail: ML90@Chrysler.com



**From:** Morrie Lee  
**Sent:** Friday, February 17, 2012 3:12 PM  
**To:** Joel Dalton (Dalton.Joel@epamail.epa.gov)  
**Cc:** Stephen Healy (healy.stephen@epamail.epa.gov)  
**Subject:** Hood Down and Variable speed fan request

As a follow up to yesterday's meeting, I am requesting approval of hood down and variable speed fan operation for our 14MY LDV 3.0L diesel DF determination, emissions and fuel economy testing.

(b) During dynamometer operation, a **fixed speed cooling fan shall be positioned** so as to direct cooling air to the vehicle in an appropriate manner with the engine compartment cover open. In the case of vehicles with front engine compartments, the fan shall be squarely positioned within 12 inches (30.5 centimeters) of the vehicle. In the case of vehicles with rear engine compartments (or if special designs make the above impractical), the cooling fan shall be placed in a position to provide sufficient air to maintain vehicle cooling. The fan capacity shall normally not exceed 5300 cfm (2.50 m<sup>3</sup>/sec). However, **if the manufacturer can show that during field operation the vehicle receives additional cooling, and that such additional cooling is needed to provide a representative test, the fan capacity may be increased, additional fans used, variable speed fan(s) may be used, and/or the engine compartment cover may be closed, if approved in advance by the Administrator.** For example, the hood may be closed to provide adequate air flow to an intercooler through a factory installed hood scoop. Additionally, the Administrator may conduct certification, fuel economy and in-use testing using the additional cooling set-up approved for a specific vehicle.

Here is a snapshot of intradepartment correspondence summarizing the justification.

Figure 1 – 3.0L WK Diesel operation on the chassis dynamometer with fixed speed and variable speed cooling fan

CONSTANT VEHICLE SPEED DATA						
	Hood Closed, Road Speed Fan			Hood Open, Fixed Speed Fan (9000 cfm - "FTP-type")		
Vehicle speed (mph)	31	47	62	31	47	62
gear engaged	5	7	8	5	7	8
Engine speed (rpm)	1400	1350	1415	1380	1350	1425
Injected fuel (mg/s intake)	9.3	22	27	9.8	21	24
MAF Air temperature (°C)	31	31	32	30	34	32
CAC Temperature (°C)	29	29	30	36	30	26
Ambient temperature (°C)	26	25	27	25	25	25
Coolant temperature (°C)	87	87	87	87	88	87
Oil temperature (°C)	91	90	91	100	94	94
	 On the bench with road speed fan, radiator fan does not turn on			 On the bench with fixed speed fan, radiator fan turn on		

Please reply with your concurrence or follow-up.

Morrie Lee  
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